

REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

The abstract of the disclosure is amended to correct the issue noted in paragraph "1" of the Official Action.

The specification is objected to as containing illegible portions on page 3 and page 15. It is noted that the illegible portions cited in the Official Action are noticeable in the version of specification that is entered in PAIR; however, these flawed areas are not present in the original document. It appears that the noted illegible portions may have resulted from the scanning procedure employed by the Patent Office to scan the originally filed application. It is noted in this regard that Applicant's file copy of the application as filed does not contain the illegible text. Similarly, the international application upon which this application is based does not include the illegible portion either. It is thus unclear to Applicant precisely how to address this issue. In an effort to further the prosecution of this application, the specification is amended by this response. Specifically, the noted paragraphs on pages 3 and 15 of the specification are presented in this Amendment with the noted portions deleted and replaced with the same wording as originally filed. If the Examiner finds this effort insufficient to overcome the objection, and would prefer an alternative approach to correct this issue, Applicant kindly asks for the Examiner's assistance.

The specification is further objected to because the character "□" is unclear. Applicant respectfully submits that this symbol is known to those of ordinary skill in the art as being shorthand for the word "square". This character is used in the

context of describing the resistivity of a film layer and indicates that the measurement of surface resistance of a material is made over a square of the material. Describing the resistivity in terms of a square removes any geometric effects that may be encountered when different surface areas are compared. In an attempt to clarify this matter, the specification is amended to note that the ratio " Ω / \square " refers to "ohms per square". Further, this ratio is used in U.S. Patent No. 5,355,144 to Walton at Column 4, Lines 12-32. This is the same reference relied upon by the Examiner in the most recent Official Action.

Claim 8 is amended to address the claim objection at paragraph "4" of the Official Action.

Claims 1-20 are rejected under the second paragraph of 35 U.S.C. § 112. Regarding Claim 1, the Official notes the phrase "which antenna pane the coating" is unclear. Claim 1 is amended to clarify this language.

Further regarding Claim 1, the Official Action notes that the phrase "by contacting in the contact areas at its two longitudinal sides and by its outer dimensions" is unclear because it is not known what type of contact is being referenced. Applicant respectfully traverses this rejection. The second full paragraph on page 6 of the specification describes the contact between the contact portion and the segmented surface portion. For exemplary purposes only, this passage provides that the contact between the segmented surface and the contact areas may be by electrical contact, or capacitive or inductive contact. Regardless of the specific method of contact, the term "contact" as used in the claim does not render the claim indefinite. It is further noted that Claim 1 is amended to correct the

antecedent basis issue noted in the Official Action. For these reasons, withdrawal of this rejection is respectfully requested.

With regard to Claims 9 and 10, the Official Action notes that the wording "a heatable area electrically isolated from an area of the coating adjacent to the segmented surface portion by at least one of the barrier lines" is unclear. Claims 9 and 10 are amended to address this issue.

The claimed subject matter pertains to an antenna pane comprising at least one glass pane and at least one electrically conductive coating that is subdivided by barrier lines into a number of electrically isolated segments. On the antenna pane, the coating incorporates at least one strip-like segmented surface portion in which the distance between the barrier lines is so small that the coating in this region can transmit HF radiation in a specified frequency range. The segmented surface portion contacts contact areas at its two longitudinal sides and by its outer dimensions, and is thus constructed as a slot antenna for electromagnetic radiation in the range of frequencies which the segmented surface portion can transmit.

Claims 1, 2, 4, 13-15 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combination of Walton et al ("Walton", U.S. Patent No. 5,355,144) in view of Ishikawa et al ("Ishikawa", U.S. Patent No. 6,239,757). In making this rejection, the Official Action takes the position that Walton discloses each feature recited in Claim 1, except for the coating being subdivided into barrier lines in a number of electrically isolated segments on which the coating incorporates at least one strip like segmented surface portion. The Official Action looks to the disclosure of Ishikawa to cure this deficiency and concludes that it would have been obvious to one having ordinary skill in the art at the time of the invention to combine

Walton and Ishikawa as the combination yields predictable results. This rejection is respectfully traversed.

Walton pertains to a slot antenna comprising a metal-free slot between metallic parts of a car. As described in Column 2, Lines 31-33, the antenna is formed between the metal frame of a window and a conductive, optically transparent film panel which is bonded to the window. Alternatively, Walton discloses a coating-free slot-like area in a metal coating at Column 9, Lines 29-33. To function as a slot antenna, Walton discloses that the antenna should be fed by an unbalanced transmission line so that the grounded conductor is the transmission line coupled to the antenna near the inner edge of the outer metal of the frame and so that the ungrounded conductor is coupled to the inner film panel near the oppositely facing peripheral edge of the conductive panel. The ungrounded conductor of the transmission line may be directly coupled to the film or capacitively coupled.

Further, Walton discloses that the conductive film may comprise a mesh or screen arrangement. Column 4, Lines 25-31. However, Walton does not disclose that metallic elements should be located within the slot. Specifically, in Fig. 2 of Walton, the antenna slot 24 is defined by the outer peripheral edge of the electrically conductive film and the inner metal edge 20 of the window. The window defines an aperture which is closed by a non-conductive optically transparent window, typically of glass, extending across the aperture. Therefore, there is glass in the region of slot antenna 24. Column 3, Line 63 to Column 4, Line 11. Walton teaches that the slot width must be sufficiently large such that the capacitive effects across it at frequencies of operation are negligible. In this manner, the signal is not shorted out.

Column 4, Lines 32-34. Introducing conductive elements within the area of the slot

would therefore go against the disclosure of Walton.

Regarding the embodiment shown in Fig. 10 of Walton, which the Official Action relies on, a circular gap 104 forms a slot which is essentially a continuous, polygonal, non-conducting slot within the area of the film 105. This defines an interior polygonal panel 106, spaced from a surrounding exterior conductive sheet 108. While Walton does mention that other shapes may be used, Walton refers only to the outer boundaries of the slot that define the gap 104. As the Official Action correctly notes, there is no disclosure of barrier lines subdividing the coating into a number of electrically isolated segments on which the coating incorporates at least one strip-like segmented surface portion. In an attempt to cure this deficiency, the Official Action cites the disclosure of Ishikawa.

Ishikawa pertains to a communication module that does not alter the visual appearance of the vehicle on which it is installed. The module, or radar head 1, is located in the same position as the vehicle license plate. See Fig. 5. The radar head 1 comprises a plane antenna section 3 composed of an NRD waveguide 30 and a component referred to as a "slot antenna 33". Column 3, Lines 44-45. The component 33 is shown in Fig. 4 having a lattice structure. A conductive plate 6 has latticed slots 32. This lattice portion is said to work as the slot antenna 33. Column 4, Lines 13-22.

The "slot antenna" in Ishikawa is not a slot antenna in the same sense as Walton. In Ishikawa, the "slot antenna" 33 is merely a window through which a circularly polarized millimeter wave can be emitted from the slots 32. The lattice portion is made of small conductive pieces 6a stuck on a prevention film that

transmits millimeter waves with only a small loss. Column 4, Lines 16-21.

Ishikawa's lattice portion does not function as a slot antenna in the same manner as Walton because there is no connection of a transmission line, such as a coaxial cable, to the borders of the slot to make the slot area itself emit or receive waves. Rather, the component 33 in Ishikawa, is merely a passive component that does not contribute to the combination incident beams to produce the circularly polarized beam that is emitted. The beam that is emitted results from the interference of the waves themselves.

Further, Ishikawa discloses that the millimeter wave enters the plane section 3 through the slots 32 of the "slot antenna", and is received by dielectric striplines 30a, 30b. Column 5, Lines 1-5. The fact that the wave is received by striplines 30a, 30b, further supports the conclusion that the component 33 is merely a window for the wave(s) to pass through, and not an antenna.

Thus, a person of ordinary skill in the art would not look to modify Walton as taught by Ishikawa, as the principle of operation of Walton would be altered. The "slot antenna" in Walton would be replaced by a window through which millimeter waves travel. Where a proposed modification or combination of the prior art would change the principle of operation of the prior art invention, then the teachings of the reference are not sufficient to render the claims obvious. M.P.E.P. § 2143.01, Part VI. For this reason, withdrawal of this rejection is respectfully requested.

Claims 2-20 ultimately depend from Claim 1, which is allowable for the reasons discussed above. For at least this reason, these dependent claims are also allowable.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

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